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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,037	12/30/2003	Andrew S. Grover	42.P18168	9197

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EXAMINER	
LI, ZHUO H	

ART UNIT	PAPER NUMBER
2185	

DATE MAILED: 11/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/750,037	GROVER ET AL.	
	Examiner	Art Unit	
	Zhuo H. Li	2185	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-7,9-12 and 14-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3-7, 9-12 and 14-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 12, 2006 has been entered.

Response to Amendment

2. This Office action is in responds to the amendment filed after Final Rejection on September 12, 2006, and continued examination request filed on October 12, 2006, claims 1, 3-7, 9-12, 14-18 are pending in the applications, and claims 2, 8 and 13 are canceled.

Claim Rejections - 35 USC § 101

3. Claims 7, and 9-11 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claim 7, the term "A machine readable medium" in line 1 defined in the specification in this instance (see paragraph [0023] to [0024]) provides intrinsic evidence in the form of examples of items considered to fall within the broadest reasonable interpretation of machine readable media. These examples include computer storage media and communication media. While the computer storage media would establish a statutory category of a machine or

manufacture, the communication media include forms of energy (e.g., data signals, propagated signals, and carrier waves) and media (e.g., a wire) which are not functionally or structurally interconnected with the instructions in such a manner as to enable the instructions to act as a computer component and realize any functionality they may possess.

Regarding claims 9-11 are also rejected because of depending on claim 7, containing the same deficiency.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 3-7, 9-12 and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hetzler (US PAT. 5,682,273 hereinafter Hetzler) in view of Ramakrishnan (US PAT. 5,636,355 hereinafter Ramakrishnan).

Regarding claim 1, Hetzler discloses a method comprising a system (40, figure 1) detecting an occurrence of a predetermined event, i.e., detecting reading or writing access to the disk drive, and spinning up a hard disk (34, figure 1) of the system in response to detecting the event (col. 1 lines 27-30). Hetlzer differs from the claimed invention in not specifically teaching that the predetermined event is a cache of the hard disk reaching a predetermined level of dirty, the predetermined level is to be reached before the cache of the hard disk is full of dirty data and spinning up the hard disk of the system prior request to exchange data with the hard disk in response to the detecting the event. However, Ramakrishnan teaches a method for reducing a number of disk accesses needed to satisfy requests for reading data from and writing data to a hard disk by checking a cache reaching a predetermined level of dirty data (col. 3 lines 27-32), the predetermined level of level is to be reached before the cache of the hard disk is full, i.e., a specific threshold is set at between approximately 90% and 95% of the capacity of the cache (col. 3 lines 33-40), and spinning up a hard disk of the system prior to a request to exchange data with the hard disk in response to detecting the event, i.e., setting a "purge request" indicating that the cache should be purged to the disk when a predetermined threshold is exceeded (col. 5 lines 30-58). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Hetzler in having that the predetermined event is a cache of the hard disk reaching a predetermined level of dirty, the predetermined level is to be reached before the cache of the hard disk is full of dirty data and spinning up the hard disk of the system

prior request to exchange data with the hard disk in response to the detecting the event, as per teaching of Ramakrishnan, because it reduces the number of disk accesses needed to satisfy requests for reading data from and writing data to the hard disk.

Regarding claim 3, Ramakrishnan discloses the cache of the hard disk consisting of nonvolatile memory (col. 5 lines 12-14).

Regarding claims 4-6, Hetzler teaches an interface controller (13, figure 1) handling communication with the disk drive (40, figure 1, col. 4 lines 48-59) such that the predetermined event obviously including detecting a presence of a system user, one of movement and activation of one of an input device and a pointing device or movement of a mouse or activation of a key on a keyboard.

Regarding claim 7, the limitations of the claim are rejected as the same reasons set forth in claim 1.

Regarding claim 9, the limitations of the claim are rejected as the same reasons set forth in claim 3.

Regarding claims 10-11, the limitations of the claims are rejected as the same reasons set forth in claims 4-6.

Regarding claim 12, the limitations of the claim are rejected as the same reasons set forth in claim 1.

Regarding claim 14, the limitations of the claim are rejected as the same reasons set forth in claim 3.

Regarding claims 15-17, the limitations of the claims are rejected as the same reasons set forth in claims 4-6.

Regarding claim 18, Ramakrishnan discloses the method wherein the request to exchange data with the hard disk is a write request to write the dirty data corresponding to the predetermined event to the hard disk (col. 3 line 27 through col. 4 line 12, and col. 5 lines 30-58).

Response to Arguments

6. Applicant's arguments filed on October 12, 2006 have been fully considered but they are not persuasive.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In response to applicant's arguments that neither Hetzler nor Ramakrishnan discloses spinning up a hard disk in response to detecting the predetermined event, it is note that Ramakrishnan teaches purging of the cache being performed only in quiescent periods, i.e., in idle state (col. 5 lines 31-32), and purging the write cache data by committing selected dirty blocks to the disk when the cache reaches a predetermined level of dirty data (col. 3 lines 27-32 and col. 5 lines 32-58). In order to perform purge operation to the disk, one skill in the art would recognize to spin up the hard disk in response to detect the predetermined event. Thus, the combination of Hetzler and Ramakrishnan teaches the claimed limitations.

In response to applicant's argument that combining Ramakrishnan with Hetlzer would not produce a device that operates as intended by Hetzler, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary

reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In response to applicant's argument that combining Ramakrishnan with Hetlzer would not have produced the claimed "in response to the detected event...prior to a request to exchange data with the hard disk", it is noted that Ramakrishnan teaches to purge the write cache data by committing selected dirty blocks to the disk when the cache reaches a predetermined level of dirty data (col. 3 lines 27-32 and col. 5 lines 32-58) during quiescent periods (col. 5 lines 30-32). Thus, the hard disk of the system as taught by Ramakrishnan is obviously spun up prior to a request to exchange data with the hard disk, i.e., request to perform purging, in response to detecting the event. As a result, the combination of Hetzler and Ramakrishnan teaches the claimed limitations.

Note dependent claims 3-6, 9-11 and 14-18 are also rejected for at least the reasons stated above.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zhuo H. Li whose telephone number is 571-272-4183. The examiner can normally be reached on Tues - Fri 9:00am - 6:30pm and alternate Monday..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sanjiv Shah can be reached on 571-272-4098. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Zhuo H. Li

Patent Examiner
November 16, 2006

SANJIV SHAH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100